

Exhibit F

In the Matter Of:

United States vs

Google

MARK ISRAEL, PH.D.

March 14, 2024



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1 sides of its platform?

2 A. In general, all else equal, there

3 are network effects here that say advertisers

4 prefer platforms that have more publishers, and

5 publishers prefer -- prefer platforms that have

6 more advertisers, all else equal.

7 Q. And why, if at all, does scale

8 matter to ad exchanges?

9 ATTORNEY EWALT: Objection to

10 form and foundation.

11 THE WITNESS: Yeah, I'm not -- I

12 mean, the -- I'm not sure that it does.

13 I mean, the evidence here is that

14 ad exchanges are -- there are lots and

15 lots of ad exchanges competing at various

16 small sizes. To me, it's the first

17 indicator that this is not an industry in

18 which one has to have scale to compete.

19 BY ATTORNEY NAKAMURA:

20 Q. Is it your opinion, sitting here

21 today, that scale does not matter to the

22 competitiveness of ad exchanges in digital

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1 display advertising?

2 ATTORNEY EWALT: Objection to

3 form.

4 THE WITNESS: It's not my opinion

5 that there's no scale effects at all. I

6 mean, we talked about network effects, so

7 you need some number of publishers and

8 advertisers using your product. And it's

9 not my opinion that, you know, I could go

10 launch an ad tech product with five

11 impressions.

12 So I think there's some role for

13 scale, but I don't think I've seen any

14 evidence that you have to be particularly

15 large to be able to reach scale. And I

16 think that's shown by the large number of

17 small competitors that continue to stay

18 in the market and -- and win business.

19 BY ATTORNEY NAKAMURA:

20 Q. And how do you define, for example,

21 by market share, what a "small competitor" is in

22 the ad exchange business?

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1 A. I don't have a specific cutoff for

2 you. It's pretty common to see a firm of less

3 than 5 or less than 1 percent.

4 If you look at the data here, there

5 are dozens of ad exchanges competing and staying

6 in the market. That's not a market structure

7 that, to me, is suggestive that scale is required

8 to compete.

9 Q. And in your view, as an economist,

10 are the ad exchanges you're describing

11 differentiated?

12 A. They're not identical, so they're

13 -- I guess they're differentiated. They're

14 providing the same basic services. They're

15 taking bids from buy side, and they're bidding on

16 publisher exchanges. So they're not identical,

17 but they're -- they seem to be successfully

18 competing for advertisers and publishers.

19 Q. And as an economist, what do you

20 understand the word "differentiated" to mean used

21 in the context of comparing different firms?

22 A. That they're not -- they're not

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1 selling the same thing, that there are

2 differences in their services.

3 Q. And why, if at all, in your

4 opinion, does scale matter to publisher ad server

5 products?

6 ATTORNEY EWALT: Objection to

7 form and foundation.

8 THE WITNESS: Again, it's not

9 obvious, to me, that scale -- SV

10 large-scale is required, but we talked

11 some about there being technology costs

12 to developing an ad server. I talked

13 about that in the report. So you

14 probably need enough scale to be able to

15 spread those costs out over enough

16 business to make it cost-effective.

17 That's the main one I can think

18 of.

19 I mean, generally, you're going


20 to -- network effects still apply.

21 You're going to want a ad server with a

22 set of matching rules, and so on, that

<p style="text-align: right;">Page 334</p> <p>1 are able to attract advertisers and</p> <p>2 publishers. But that's less about</p> <p>3 needing scale upfront and more about, you</p> <p>4 know, competing to attract business.</p> <p>5 BY ATTORNEY NAKAMURA:</p> <p>6 Q. And are there network effects that</p> <p>7 are relevant to publisher ad servers, in your</p> <p>8 opinion?</p> <p>9 A. Yes.</p> <p>10 Q. What are they?</p> <p>11 A. Again, that you want -- I mean,</p> <p>12 it's more about the -- the plat -- the rules of</p> <p>13 the platform and the extent the ability it has to</p> <p>14 attract buyers and sellers. But it's important</p> <p>15 for an ad server -- to be successful, that it</p> <p>16 attracts publishers and that that set of</p> <p>17 publishers and the rules of the ad server attract</p> <p>18 advertisers. So it's -- there's network effects</p> <p>19 in the -- in the sense that attracting both sides</p> <p>20 of the market matters.</p> <p>21 Q. And are there, in your opinion,</p> <p>22 bidirectional network effects that are of</p>	<p style="text-align: right;">Page 336</p> <p>1 are part -- and, again, I think of these</p> <p>2 as part of the -- creating a match, and</p> <p>3 at every part of that match, you have to</p> <p>4 get a publisher -- you have to get</p> <p>5 publishers and advertisers to agree to</p> <p>6 use your product.</p> <p>7 So publishers have to agree to</p> <p>8 use the ad server, and advertisers have</p> <p>9 to find it worthwhile to buy inventory</p> <p>10 from a publisher using that ad server.</p> <p>11 So in -- in each of these matched stages,</p> <p>12 you need to attract both sides of the</p> <p>13 market.</p> <p>14 BY ATTORNEY NAKAMURA:</p> <p>15 Q. But how often, as a relative</p> <p>16 matter, do advertisers buy directly into a</p> <p>17 publisher's ad server as opposed to, for example,</p> <p>18 using a DSP or other intermediary service to</p> <p>19 purchase inventory?</p> <p>20 ATTORNEY EWALT: Objection to</p> <p>21 form.</p> <p>22 THE WITNESS: I mean, any --</p>
<p style="text-align: right;">Page 335</p> <p>1 relatively the same magnitude moving in both</p> <p>2 directions for a publisher ad server?</p> <p>3 ATTORNEY EWALT: Objection to</p> <p>4 form.</p> <p>5 THE WITNESS: I think they're --</p> <p>6 in all of these technologies, I think</p> <p>7 they're relatively of the same magnitude</p> <p>8 because the whole business is about</p> <p>9 making matches, so you need people</p> <p>10 choosing your product on both sides.</p> <p>11 BY ATTORNEY NAKAMURA:</p> <p>12 Q. So is it your opinion that the</p> <p>13 bidirectional nature of network effects for a</p> <p>14 publisher ad server are roughly equal to those</p> <p>15 found in a advertising ad exchange product?</p> <p>16 ATTORNEY EWALT: Objection to</p> <p>17 form.</p> <p>18 THE WITNESS: I don't -- it's --</p> <p>19 I don't know if it's something where you</p> <p>20 say "roughly equal." I don't know what</p> <p>21 the number is. But I guess conceptually,</p> <p>22 absolutely, yes. Because both products</p>	<p style="text-align: right;">Page 337</p> <p>1 anytime that they buy from anybody who's</p> <p>2 O&O, they're buying directly into an ad</p> <p>3 server.</p> <p>4 My point is that if they -- if an</p> <p>5 ad server -- if Google's ad server didn't</p> <p>6 work well such that the rules didn't</p> <p>7 create good matches, advertisers would</p> <p>8 take their business elsewhere. And</p> <p>9 that's a -- that's -- advertisers -- if</p> <p>10 the rules of the game that were set up by</p> <p>11 the ad server were unattractive,</p> <p>12 advertisers are entirely capable of</p> <p>13 substituting around by purchasing ads in</p> <p>14 other forms.</p> <p>15 BY ATTORNEY NAKAMURA:</p> <p>16 Q. And other than purchasing from O&O</p> <p>17 publishers, what examples do you have of an</p> <p>18 advertiser buying in directly to a publisher ad</p> <p>19 server?</p> <p>20 A. I mean, anytime that they buy</p> <p>21 direct.</p> <p>22 Q. And are there any examples you have</p>

<p style="text-align: right;">Page 338</p> <p>1 of indirect purchasing done directly into a</p> <p>2 publisher ad server other than through O & O</p> <p>3 inventory?</p> <p>4 ATTORNEY EWALT: Objection to</p> <p>5 form.</p> <p>6 THE WITNESS: I mean, I'm not</p> <p>7 sure if it's in -- I mean, obviously, the</p> <p>8 O & O is a big deal. But I think that --</p> <p>9 yeah, I think the O & O is where I can</p> <p>10 see -- the examples I have in mind of</p> <p>11 where they purchase indirect. And,</p> <p>12 obviously, to me, that's an example of</p> <p>13 substituting around the ad server.</p> <p>14 There may be examples in the</p> <p>15 record, but as I sit here, I don't</p> <p>16 think -- I can't think of a case where</p> <p>17 there's an indirect purchase straight</p> <p>18 into an ad server that isn't in an O & O</p> <p>19 setting.</p> <p>20 BY ATTORNEY NAKAMURA:</p> <p>21 Q. Okay. Let's turn now to</p> <p>22 Paragraph 529 of your report, which is on</p>	<p style="text-align: right;">Page 340</p> <p>1 it causes me to think it looks like the market is</p> <p>2 doing well and thus I would need to see some very</p> <p>3 clear demonstration of a but-for world that would</p> <p>4 have been even better to conclude there's harm.</p> <p>5 So I wouldn't stop with the output</p> <p>6 by itself. That's my point to Plaintiffs'</p> <p>7 experts, you need to show a but-for world. But</p> <p>8 it certainly tells me that it's going to be a</p> <p>9 kind of Herculean task to show harm here because</p> <p>10 this market seems to be doing very well. But you</p> <p>11 could do it; you just -- they would have had to</p> <p>12 show a but-for world to do so.</p> <p>13 Q. And how do you identify as a</p> <p>14 methodological matter, as an economist, when</p> <p>15 evaluating a competitiveness of a market,</p> <p>16 candidate but-for worlds that you might compare</p> <p>17 to the actual world with respect to output?</p> <p>18 ATTORNEY EWALT: Objection to</p> <p>19 form.</p> <p>20 THE WITNESS: I mean, I -- I -- I</p> <p>21 don't know exactly what you're asking,</p> <p>22 candidate but-for worlds -- it's the</p>
<p style="text-align: right;">Page 339</p> <p>1 Page 384.</p> <p>2 A. Okay.</p> <p>3 Q. All right. Paragraph 529, you</p> <p>4 describe various indicators of market performance</p> <p>5 that are consistent with the well-functioning of</p> <p>6 the marketplace; is that correct?</p> <p>7 A. Yes.</p> <p>8 Q. As an economist, when analyzing</p> <p>9 competition and markets, do you examine whether</p> <p>10 output has been reduced relative to a but-for</p> <p>11 world without the allegedly restrictive conduct?</p> <p>12 A. I mean, that's what you would need</p> <p>13 to do to show harm. I mean, I think it's an</p> <p>14 explicit point I make at some length, is that</p> <p>15 Plaintiffs' experts have not done so.</p> <p>16 Q. And you do not look at, however,</p> <p>17 whether output is simply increasing or decreasing</p> <p>18 without reference to a but-for world; is that</p> <p>19 correct?</p> <p>20 A. I would certainly look at it. I</p> <p>21 look at data -- all data, and when I see output</p> <p>22 growing dramatically and exceeding projections,</p>	<p style="text-align: right;">Page 341</p> <p>1 Plaintiffs' job, as I see it, to explain</p> <p>2 what their but-for world is.</p> <p>3 Candidate but-for worlds would</p> <p>4 say, in general terms, Here's some</p> <p>5 conduct I think was harmful, and now I'm</p> <p>6 going to turn that conduct off and show</p> <p>7 you the market would have done better.</p> <p>8 That's the sort of modeling that</p> <p>9 economists do regularly. It wasn't done</p> <p>10 here. But, certainly, the idea that I'm</p> <p>11 going to turn off a piece of conduct and</p> <p>12 show you that the market would perform</p> <p>13 better without it is -- is the kind of</p> <p>14 analysis that you would have to do.</p> <p>15 BY ATTORNEY NAKAMURA:</p> <p>16 Q. Is it your opinion that competition</p> <p>17 can be harmed in a market where output is</p> <p>18 increasing over time?</p> <p>19 ATTORNEY EWALT: Objection to</p> <p>20 form.</p> <p>21 THE WITNESS: Yes.</p> <p>22</p>

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<p>1 academic textbooks, journals, well-accepted</p> <p>2 concepts in the field.</p> <p>3 So I just want to make sure</p> <p>4 that you have the opportunity to tell me if there</p> <p>5 are any citations you can provide at all</p> <p>6 regarding the economic understanding of a duty to</p> <p>7 deal.</p> <p>8 A. There's lots of citations in this</p> <p>9 report in other sections, and there are more</p> <p>10 beyond that. This is an introduction that has</p> <p>11 literally no footnotes because it's introducing</p> <p>12 the rest of the report.</p> <p>13 If you want to look in the rest of</p> <p>14 the report, there's whole sections on the harms</p> <p>15 that come -- that would come from behavior like</p> <p>16 this.</p> <p>17 Q. And last question: Can you give me</p> <p>18 an example, as an economist, of any situation in</p> <p>19 which a duty to deal would not, in your opinion,</p> <p>20 be harmful to competition and consumers?</p> <p>21 ATTORNEY EWALT: Objection to</p> <p>22 form.</p>	<p>1 deposition.</p> <p>2</p> <p>3 (Witness excused.)</p> <p>4</p> <p>5 (Deposition concluded at 6:36 p.m.</p> <p>6 EDT)</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p>
Page 495	Page 497
<p>1 THE WITNESS: I think a duty to</p> <p>2 deal -- an actual requirement to deal is</p> <p>3 harmful. I can't think of an example</p> <p>4 where the duty is not harmful.</p> <p>5 There might be situations where</p> <p>6 firms work together in some way that's</p> <p>7 beneficial, but I think requiring firms</p> <p>8 to work with their competitors is harmful</p> <p>9 to the essence of the competitive</p> <p>10 process.</p> <p>11 ATTORNEY NAKAMURA: All right.</p> <p>12 See, we're at time.</p> <p>13 Thank you very much, Dr. Israel.</p> <p>14 And we'll go off the record.</p> <p>15 ATTORNEY EWALT: Not quite. I</p> <p>16 want to designate the transcript as</p> <p>17 highly confidential under the protective</p> <p>18 order in this case.</p> <p>19 Now we can go off the record.</p> <p>20 ATTORNEY NAKAMURA: Thank you.</p> <p>21 THE VIDEOGRAPHER: Off the record</p> <p>22 at 6:36. And this ends today's</p>	<p>C E R T I F I C A T E</p> <p>1 I, Cindy L. Sebo, Nationally Certified Court</p> <p>2 Reporter herein, do hereby certify that the foregoing</p> <p>3 deposition of MARK A. ISRAEL, PH.D. was taken before</p> <p>4 me pursuant to notice at the time and place indicated;</p> <p>5 that said witness duly swore to tell the truth, the</p> <p>6 whole truth, and nothing but the truth under penalties</p> <p>7 of perjury; that said testimony of witness was</p> <p>8 correctly recorded to the best of my abilities in</p> <p>9 machine shorthand, thereafter transcribed under my</p> <p>10 supervision with computer-aided transcription; that</p> <p>11 deposition is a true and accurate record of the</p> <p>12 testimony given by the witness; that I am neither</p> <p>13 counsel, nor kin to any party in said action, nor</p> <p>14 interested in the outcome; and that a copy of this</p> <p>15 transcript obtained from a source other than the court</p> <p>16 reporting firm, including an adversary or co-counsel</p> <p>17 in the matter, is uncertified and may not be used at</p> <p>18 trial.</p> <p>19 </p> <p>20 CINDY L. SEBO, RMR, CRR, CLR, RPR, CCR, CSR,</p> <p>21 RSA, CA CSR 14409, NJ Certified CR 30XI0024460,</p> <p>22 NJ Certified RT 30XR00019500, NM CSR 589, NY</p> <p>Realtime Court Reporter, NY Association Certified</p> <p>Reporter, OR CSR 230105, TN CSR 998, TX CSR 12778,</p> <p>WA CSR 23005926, Notary Public</p>

INSTRUCTIONS TO WITNESS

1 Please read your deposition over
2 carefully and make any necessary corrections.
3 You should state the reason in the appropriate
4 space on the errata sheet for any corrections
5 that are made.
6 After doing so, please sign the
7 errata sheet and date it.
8 You are signing same subject to the
9 changes you have noted on the errata sheet, which
10 will be attached to your deposition.
11 It is imperative that you return
12 the original errata sheet to the deposing
13 attorney within thirty (30) days of receipt of
14 the deposition transcript by you. If you fail to
15 do so, the deposition transcript may be deemed to
16 be accurate and may be used in court.
17
18
19
20
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1 MARK A. ISRAEL, PH.D. NO. 2024-933018
2 E R R A T A S H E E T
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4 REASON FOR CHANGE:

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6 PAGE_____ LINE_____ CHANGE _____
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1 MARK A. ISRAEL, PH.D. NO. 2024-933018
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ACKNOWLEDGMENT OF WITNESS

1
2 I, MARK A. ISRAEL, PH.D., do hereby certify that
3 I have read the foregoing pages herein, and that the
4 same is a correct transcription of the answers given
5 by me of the proceedings taken remotely to the
6 questions therein propounded under penalty of perjury,
7 except for the corrections or changes in form or
8 substance, if any, noted in the attached errata sheet.
9 _____
10 DATE SIGNATURE
11
12
13
14
15 Subscribed and sworn to before me
16 this ____ day of _____, 20____.
17
18 My Commission expires:
19 _____
20
21 _____
22 Notary Public

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Page	Line	Change	Reason
		quotation)	
244	10	“obtaining it.” should be “obtaining it.”” (missing close quotation)	Transcription error.
245	16	“county” should be “accounting”	Transcription error.
247	19	“EMARKETER” should be “eMarketer”	Transcription error.
248	1	“EMARKETER” should be “eMarketer”	Transcription error.
267	9	“indirect Web, nonvideo display inventory” should be “indirect, web, non-video display inventory”	Transcription error.
267	10	“alleged open Web display” should be “alleged “open web display” (missing open quotation)	Transcription error.
267	11	“advertising market)” should be “advertising” market)” (missing close quotation)	Transcription error.
269	2	“publisher ad servers” should be “publisher ad servers—”	Transcription error.
269	4	“Google’s measured share using” should be “Google’s measured share—using”	Transcription error.
279	15	“answer in” should be “answer on”	Transcription error.
305	15	“can” should be “can-”	Transcription error.
309	13	“it is” should be “it is:”	Transcription error.
309	16	“, with citations” should be “; with citation”	Transcription error.
333	9	“scale -- SV” should be “scale --”	Transcription error..
339	14	“is that” should be “that”	Clarification.
340	15	“a competitiveness” should be “the competitiveness”	Transcription error.
366	1	“master” should be “matter”	Transcription error.
374	10	“EMARKETER” should be “eMarketer”	Transcription error.
378	11	“test” should be “test-”	Transcription error.
382	17	“reports” should be “report”	Transcription error.
385	20	“this auto” should be “this was auto”	Clarification.
389	10	“Demand” should be “demand”	Transcription error.
390	9	“ad” should be “Ads”	Transcription error.
396	8	“and done you” should be “and did you”	Transcription error.
400	17	“Demand” should be “demand”	Transcription error.
402	6	“Demand” should be “demand”	Transcription error.
408	18	“camp” should be “camp-”	Transcription error.

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Page	Line	Change	Reason
417	22	“make up the” should be “makeup, the”	Transcription error.
418	1	“the respondents looks” should be “the respondents, looks”	Transcription error
420	8	“Demand” should be “demand”	Transcription error.
446	13	“features including” should be “features—including”	Transcription error.
446	14	“auctions into” should be “auctions—into”	Transcription error.
453	4	“DFP -- DSPs” should be “DSPs”	Clarification.
453	9	“mil” should be “mille”	Transcription error.
453	11	“rate. So” should be “rate, so”	Transcription error.
456	7	“DF360” should be “DV360”	Transcription error.
456	18	“DFP360” should be “DV360”	Transcription error.
456	21	“advertising Google Ads” should be “advertising, Google Ads”	Transcription error.
468	17	“ads clients (e.g., agency” should be “Ads clients (e.g., Agency”	Transcription error.
468	18	“direct advertiser” should be “Direct Advertiser”	Transcription error.
469	1	“ads” should be “Ads”	Transcription error.
470	22	“ads” should be “Ads”	Transcription error.
477	12	“a ad server” should be “an ad server”	Clarification.
482	13	“Demand” should be “demand”	Transcription error.

I have inspected and read my deposition and have listed all changes and corrections above, along with my reasons therefor.

Date: 4/10/2024

Signature: Mak A. [Signature]